

Abstract

The invention provide a method and an apparatus for facial image acquisition and/or recognition using active lights instead of environmental lights; active lights are used to illuminate a face area when face images are captured by an image capturing unit and sent to a computer for face recognition processing. This effectively minimizes unfavorable influence caused by environmental lights, and provides excellent basis for highly accurate face recognition under varying lighting conditions. When active lights are of infrared type, an imaging process is non-intrusive to human eyes. When a strength of active lights prevails over that of environmental lights, a captured face image encodes the most relevant information about a face and can leads to highly accurate recognition performance.

A method and apparatus for facial image acquisition and/or recognition used for person identification. In infrared face image acquisition, near infrared (NIR) images of a face are captured by an imaging unit with the face illuminated by active NIR lights; an NIR optical filter is used in the imaging unit to minimize visible lights in environments while allowing NIR lights to pass through. NIR face images thus acquired provides good image quality for the purpose of face recognition. In face recognition, eyes are localized in NIR face image(s) quickly and accurately by detecting specular highlight reflection in each eye, whereby face is then localized. The invention effectively problems caused by environmental lights, and leads to accurate and fast face recognition under variable lighting conditions. Moreover, the methods use a non-intrusive and user-friendly way of active lighting for face image acquisition and recognition because the NIR lights are in the invisible spectrum.